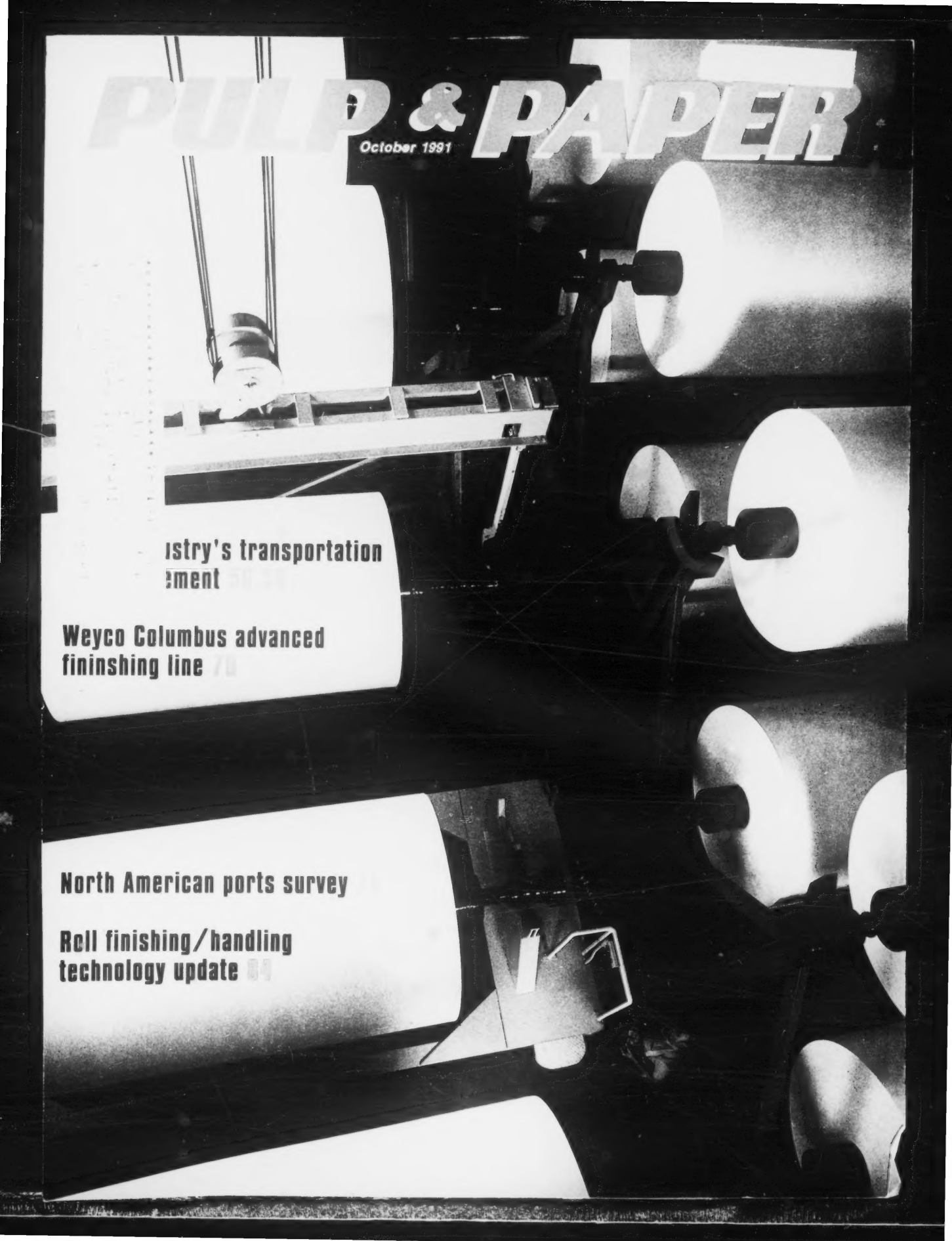
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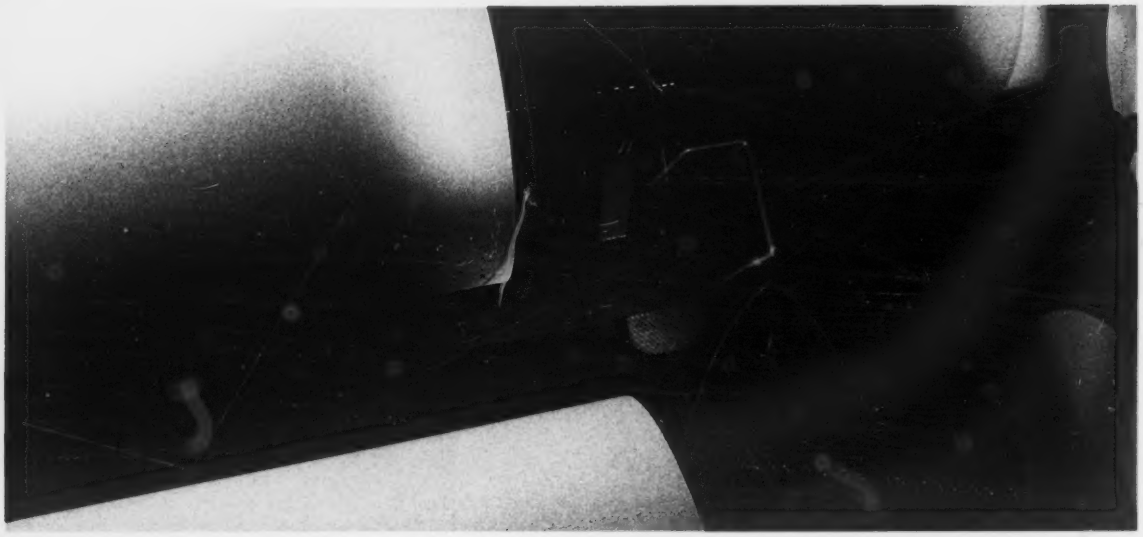

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This issue's dual focus looks at the "end of the line" for most pulp and paper mills—finishing/converting and transportation—including discussion of the latest advancements in finishing technology. On the cover, Sylvester Molski, an employee at Consolidated Papers' Wisconsin Rapids Division, positions a reel of paper in the 64-1 blade coater transport cart. (Photo courtesy of Consolidated Papers Inc.)

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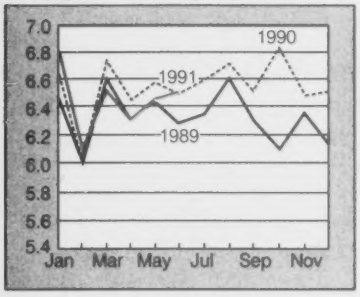
ABP

BPA

U.S. paper and board production



U.S. production of paper and paperboard totaled 6.5 million tons in June, unchanged from a year earlier, according to the American Paper Institute. The trend of production turned upward during the second quarter, raising the seasonally adjusted rate of production to 77.6 million tpy, up 3.6% from the March 1991 low and within 0.5% of last year's record total of 78.7 million tons. The biggest gains were in the paper grades, up 4.6% since March. The seasonally adjusted rate for paper during the first half was 38.4 million tpy, still down 1.6% from the year-ago period, while the rate for paperboard stood at 39.3 million tpy, up 0.6%.

Among major grades, containerboard output was up 1.0%, thanks to a 12.8% increase in production for export. Newsprint production is up, but shipments from North American mills were off 7.1% in the first half due to continuing weakness in advertising markets. Printing and writing shipments were off 3.9% from last year, but the uncoated grades were trending upward in May and June.

Canadian newsprint shipments totaled 719,000 metric tons in June, down 10.6% from June 1990. Newsprint mills operated at 85% capacity, down from 89% last year. Woodpulp shipments climbed 10.1% to 717,000 tons, as operating rates rose from 84% last year to 89%. ■

	Latest month (000 short tons)		% change from year ago	Annualized year-to-date (000 short tons)	% change from year ago
PAPER & PAPERBOARD PRODUCTION[1]					
Newsprint	June	559	3.7	6,760	4.6
Uncoated groundwood (s)	June	142	0.0	1,685	-2.7
Coated paper (s)	June	594	73.2	7,022	-4.6
Uncoated free-sheet (s)	June	919	1.7	11,042	-3.5
Other printing/writing	June	117	-4.1	1,511	-6.6
Total packaging and other paper (s)	June	367	-6.9	4,473	-2.1
Tissue	June	474	-1.0	5,746	0.3
Total paper	**June**	**3,172**	**-0.6**	**38,238**	**-1.7**
Unbleached kraft paperboard	June	1,672	-0.5	20,140	1.2
Semichemical medium	June	467	0.0	5,644	-0.5
Bleached paperboard	June	381	1.3	4,592	1.6
Recycled paperboard	June	763	3.4	8,914	-1.3
Total paperboard	**June**	**3,282**	**0.6**	**39,291**	**0.4**
Total U.S. paper and paperboard output	**June**	**6,454**	**0.0**	**77,529**	**-0.6**
PULP, WASTEPAPER & FIBER[2]					
Total U.S. woodpulp production	May	5,162	0.1	63,307	1.6
Market pulp production	May	708	1.4	9,011	5.5
Wastepaper consumption at paper/board mills	May	1,763	-2.1	21,161	2.6
Pulpwood consumption (cords)	May	8,108	-0.1	99,494	0.2
CONVERTED PRODUCTS STATISTICS[3]					
Corrugated box shipments (billion ft²)	June	25.739	-2.9	156.832[6]	-2.0
Containerboard inventories at U.S. box plants and mills	May 1	2,893	11.2		
INTERNATIONAL TRADE[2]					
U.S. paper imports (including products)	May	1,008	-8.4	12,256	-7.6
Imports of Canadian newsprint	May	646	-9.9	7,740[6]	-9.0
U.S. paper exports (including products)	May	698	27.6	8,143	19.5
Exports of unbleached kraft linerboard	May	260	28.7	3,066	16.5
Exports of woodpulp	May	576	30.0	6,396	11.5
Norscan pulp inventories[4]	June 30	1,611	15.3		
Norscan pulp operating rates[4]	June	86%	85%	84%	89%
CANADIAN STATISTICS[5] *(reported in metric tons)*					
Total newsprint shipments	June	719	-10.6	4,370[6]	-7.8
Operating rates	June	85%	89%	89%	95%
Inventories held by U.S. consumers	June 30	1,410	7.1		
Other paper/board shipments	June	612	-1.3	3,576	-3.2
Woodpulp shipments (export only)	June	717	10.1	4,168	9.5
Operating rates	June	89%	84%	89%	89%

1. American Paper Institute. 2. API, Bureau of Census, American Pulpwood Assn. 3. Fibre Box Assn., Paperboard Packaging Council. 4. North American/Scandinavian paper-grade market pulp. 5. Canadian Pulp & Paper Assn. 6. Not annualized. (s) = Shipments.

Market pulp: Wave of new capacity will keep operating rates and prices under pressure

Grade structure: Chemical paper-grade market pulp is sold in the open market and does not include captive pulp used onsite or shippped to affiliated mills within North America. Pulp is divided into grades based on whether it is made from softwood or hardwood fiber, produced by the sulfate (kraft) or sulfite pulping process, and by the amount of bleaching.

Northern bleached softwood kraft (NBSK) is the premium pulp grade because of its long fiber length and strength. U.S. chemical paper pulp statistics include about 2 million tons of fluff pulp production (including exports) used in diapers and other absorbent hygiene products. Dissolving and mechanical pulp grades are excluded from the statistics.

Production/capacity: The pulp market has been in a downward slide since early last year but has probably hit bottom. The price of northern bleached has come crashing down from a list of $830/ton at the peak of the cycle in 1988 to $525/ton and below currently. This is adding pressure to other grades such as southern pine and hardwood, which dropped sharply in price last year.

High inventories built up by Canadian producers in anticipation of a strike this fall that didn't happen is contributing to the recent collapse in softwood prices. Producer inventories of chemical paper-grade market pulp hit 1.745 million metric tons at the end of August—their highest level since March 1985. Inventories of northern softwood reached an unusually high level of about 45 days of supply vs about 20 to 30 days for sourthern hardwood and eucalyptus pulps.

However, Canadian producers will probably take substantial downtime this winter as prices drop below variable costs of many mills. This should result in a drop in inventories and bring the market into somewhat better balance. Even though production will be up about 3%, Canadian producers are forecast to average only about 82% of capacity this year vs about 94% for lower-cost U.S. producers. This is resulting in significant red ink for Canadian mills, which are also facing high environmental expenditures.

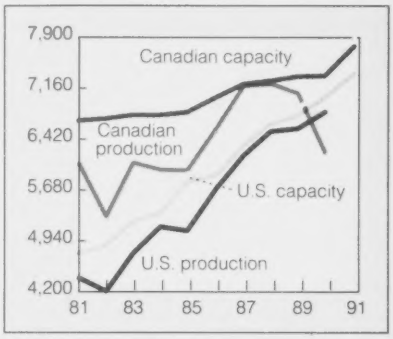
Future outlook: Demand for market pulp is expected to strengthen in 1992 with a cyclical pickup in the world economy. But the recovery in pulp prices is expected to be slow as substantial new capacity starts up over the next several years.

More than 4 million tons of new chemical paper-grade market pulp capacity is expected to startup worldwide over the 1990-93 period. Most of the new expansion is in North America or Latin America. Examples of major new projects starting in the U.S. this fall include Alabama Pine Pulp Co. (450,000 tpy), Stone Savannah River Corp. (240,000 tpy), and Union Camp Corp. (100,000 tpy). This follows startup of major new mills by Daishowa Inc. (340,000 tpy) and Weyerhaeuser Co. (425,000 tpy) last year. In Latin America, the new Aracruz mill (525,000 tpy) and two major expansions in Chile have been completed this year.

All of this new capacity was approved during an unprecedented period of industry profitability in 1987-88. Unfortunately, it will be coming on stream at a time when market pulp demand growth may be slowing. One reason for this is increased integration of pulp and paper production, particularly in Europe. Another is more competition from deinked wastepaper pulp, mechanical pulp, and mineral fillers due to environmental and cost pressures. The result will be substantial overcapacity that could last well into the mid-1990s and hold back the recovery in pulp prices.

U.S. chemical paper-grade market pulp capacity is expected to jump 9.9% in 1992, while Canadian capacity increases 2.4%. Even though shipments are expected to rise about 5% next year, Canadian mills are only expected to run at about 84% of capacity next year, while U.S. mills will average about 90%. ■

SUPPLY/DEMAND (000 tons)



FORECAST (000 metric tons)

U.S.	1990	1991e	1992e
Production	6,820	7,020	7,410
Capacity[1]	7,145	7,492	8,236
Utilization rate	95.4%	93.7%	90.0%
Imports	2,552	2,420	2,460
Exports	4,335	4,800	5,060
Apparent U.S. consumption	5,037	4,640	4,810
Canada			
Production	6,235	6,450	6,770
Capacity[1]	7,460	7,893	8,086
Utilization rate	83.6%	81.7%	83.7%

e=Pulp & Paper 1991 estimate.
1. Based on 1990 American Paper Institute and 1991 Canadian Pulp & Paper Assn. capacity surveys.

TOP U.S. PRODUCERS (000 mtpy)

	Annual capacity 000 metric tpy	Market share (%)
1. Weyerhaeuser[1,2,4,5]	1,540*	10.0
2. Georgia-Pacific[1,2,4,5]	1,530	9.9
3. Parsons & Whittemore[1,2]	1,110*	7.2
4. Canadian Pacific[1,2]	930	6.0
5. Stone[1,2]	745[a]	4.8
6. Champion[1,2]	710[b]	4.0
7. Fletcher Challenge[1]	665[c]	4.3
8. Canfor[1,3]	585[d]*	3.8
9. Federal[1,2]	540	3.5
10. MacMillan Bloedel[1,2,3]	500	3.2

Market share of top five companies: **38.0%**

Market share of top ten companies: **57.5%**

North American capacity (1991): **15.385 million metric tons**

*Includes major new capacity addition (which may not be fully operational).
1. Bleached softwood kraft. 2. Bleached hardwood kraft 3. Unbleached kraft. 4. Bleached sulfite. 5. Fluff pulp.
a. Includes 25% of Celgar Pulp. b. Includes 84.6% of Weldwood, which owns 50% of Cariboo Pulp. c. Includes 45% stake in Donohue-St Felicien. d. Includes 50% of Howe Sound Pulp.

Transportation Mismanagement Causes Paper Companies to Lose Millions

Expert says paper industry is wasting money by giving control of transportation decisions to its customers

By KELLY H. FERGUSON, Projects Editor

Customer service has become a key focus of North American pulp and paper companies during the last decade. Quality improvement programs and customer-supplier partnerships have been part of a new emphasis on serving the customer, whether it is a converter, publisher, or distributor.

But in transportation, paper companies are spending too much to meet their customers' needs. Evidence suggests that unnecessary costs have been incurred to achieve the service requested by the customer. Yet this sacrifice may not be necessary. Paper companies can achieve better service and improve transportation cost-effectiveness at the same time.

Most of this unnecessary cost results from fragmentation of control over transportation decision making and spending—both externally and internally. More customers are taking a role in directing transportation, i.e., specifying mode of transportation, picking up product, or having product delivered, thus taking much of the control away from the paper companies.

Within a paper company, it is not always clear who should influence and control transportation. The real challenge is determining who has the leverage (internally or externally) and who should manage the relationship with the carriers. Such a determination is necessary to achieve a high degree of customer service along with increased productivity.

Pulp & Paper recently discussed ways to curtail this excess spending, focusing on controlling transportation and distribution within and outside the mill, in an interview with John Anderson, vice president at A.T. Kearney. In a previous interview, Anderson talked about methods the transportation industry was using to serve the pulp and paper industry better (*P&P*, Nov. 1989, p. 87).

A.T. Kearney is a management consulting firm, and Anderson specializes in logistics and transportation. The company has worked for most major paper companies in North America as well as railroad and trucking firms that serve the paper industry.

This article is the second part of a series on reducing costs in the industry, written in cooperation with experts from A.T. Kearney. The first article (Sep. 1991, p. 110) focused on cost procurement considerations for power and utility operations at pulp and paper mills. A third article will discuss the cost savings in the purchasing functions.

P&P: *How much money is being spent by the pulp and paper industry on transportation, and how does that figure compare with other industries?*

Anderson: According to our estimates, the value of pulp, paper, and allied shipments exceeded $132 billion in 1990. The transportation portion represents approximately 7% of a paper company's gross sales, based on a recent study by A.T. Kearney (Table 1). The 7% figure is about the highest transportation cost as a percentage of gross sales of any industry—exceeded only by the mining and metals industry.

Based on that 7% figure, the paper industry is spending more than $9 billion annually on transportation. Moreover, this figure is somewhat understated because it does not account for those shipments picked up by the customer or where the customer arranges for and pays the freight. If such noncontrollable freight is considered, the transportation dollar amount is probably closer to $12 billion.

Transportation is by far the largest component of lo-

TABLE 1: **Transportation at a typical pulp and paper company makes up 7.1% of gross sales, based on a recent study. While the paper industry is generally in line with other industries on logistics costs, that 7.1% cost is probably the highest of any industry, except for the mining and metals industry.**

Function	Paper and related goods	Overall
Transportation	7.1%	3.9%
Warehousing	1.4%	1.8%
Inventory and carrying costs	1.6%	2.8%
Logistics and administration	0.9%	0.7%
Overall	11.0%	8.8%

gistics costs for the paper industry. For a $2.6-billion paper company we recently worked with, transportation represented 67% of total logistics costs, or about $180 million (Figure 1). When inventory, warehousing, and administration costs are added to transportation expenditures, the total logistics costs make up 14% of a typical paper company's operating costs, directly behind fiber costs (28%) and manufacturing costs (27%) (Figure 2). Logistics costs as a percent of value added—those controllable costs over and above raw materials—is even higher, representing around 30% of a paper company's value-added chain (Figure 3).

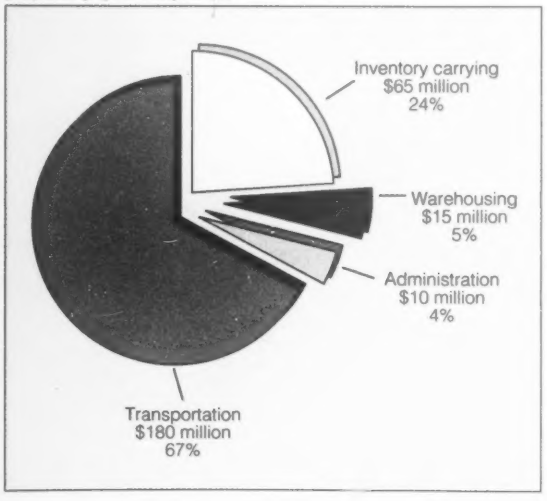
Therefore, improvement in logistics costs, especially transportation, can have a significant impact on a typical paper company's bottom line. It is also one of the most controllable value-added components in the supply chain.

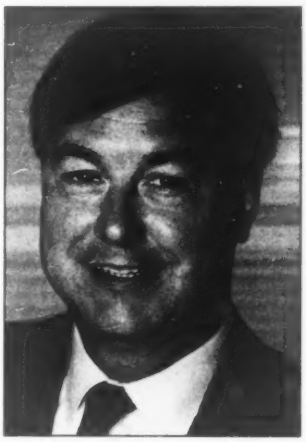
P&P: *Why does the paper industry spend so much for freight shipments?*

Anderson: There are a number of reasons. Foremost is the stringent customer service requirements of the paper industry, especially in the white paper business. Paper company customers want to reduce inventory, eliminate warehouse requirements, shorten order lead times, and schedule production on a just-in-time basis. As a result, paper companies are being forced to ship the product faster and handle the product several times to meet customer requirements.

In many cases, the paper company is being forced to pay a transportation premium to meet promised delivery dates. Thus, more product currently is being handled by truck, which is generally at a higher cost than rail. Also, more product is being handled through distribution centers, which require shipping into and out of the centers.

FIGURE 1: **A.T. Kearney recently worked with a paper company whose logistics costs were about $270 million; $180 million of that figure was transportation costs. Such large expenditures show transportation and inventory are major leverage points for pulp and paper companies.**





John Anderson, vice president at A.T. Kearney, specializes in logistics and transportation.

In addition, paper companies are not leveraging and controlling their total transportation traffic and expenditures with their carriers and customers and are therefore paying a higher than required level of transportation costs. My experience suggests that paper companies, on average, are overspending by 10% to 12% for transportation.

P&P: *How much control has the industry given to its customers? And if regaining control is possible, can the industry satisfy customer requirements and be more cost-effective with transportation?*

Anderson: Customers have more control than most paper companies realize. However, it is not really a matter of how much control. The issue revolves around *who* should control the decisions—the customer or the shipper. The party that makes the decisions generally is the one that can achieve the most cost efficiency and leverage with the carriers.

Traditionally, the shipper has controlled the transportation of product, including selection of the mode of transportation and which carrier would be used. However, this is changing. More and more customers are seeking to control the purchase of transportation.

As for the question of whether the industry can achieve customer satisfaction and cost efficiency, the answer would have to be "yes." The essence of quality/customer service improvement is process improvement. Higher levels of customer service and cost efficiency go hand in hand. A paper company can achieve better service and improve transportation cost efficiency at the same time. The two are not inconsistent.

All too often, costs are being sacrificed unnecessarily to achieve the service requirements of the customer. This sacrifice is especially true in the pulp and paper

industry, in which control over transportation decision making as well as spending is being given away to the customer or is fragmented within the paper company organization.

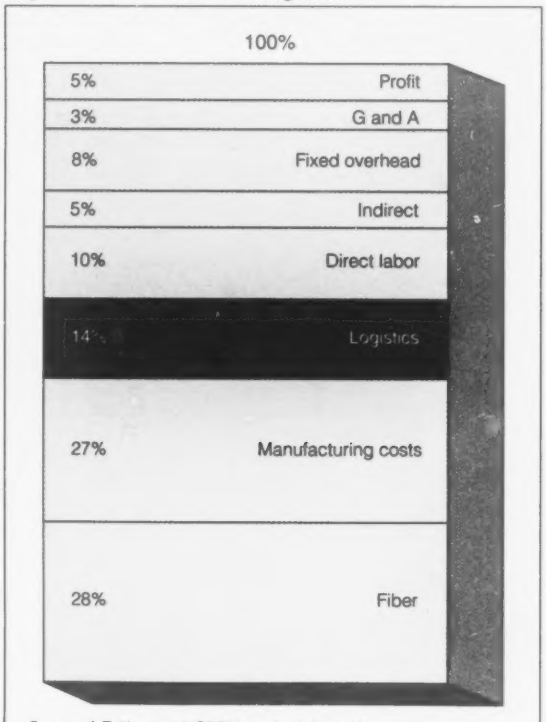
In effect, paper companies are giving up their responsibility for the final link of the logistics process—delivering the product to the customer. As a result, paper companies are overspending millions of dollars on the premise of keeping the customer happy.

P&P: *Earlier, you mentioned that paper companies, in an effort to shorten delivery times, have shifted more traffic from rail to truck, and thus possibly have incurred higher costs. Could you elaborate on this trend?*

Anderson: Clearly, more product (especially in the white paper segment) is being shifted to truck because of shortened order lead times and customers demanding just-in-time delivery. Customers don't want to hold inventory. They want to pick up the phone, place the order, and have a truck deliver product the next day.

Also, order sizes are getting smaller, necessitating truck delivery. As a result, truck shipments currently account for more than 55% of total pulp and paper shipments, whereas just a few years ago, rail was the predominant mode of transportation (Figure 4).

FIGURE 2: **At a typical pulp and paper company, total logistics costs—expenditures for transportation, inventory, warehousing, and administration—make up 14% of operating costs, behind only fiber costs and manufacturing costs.**



Source: A.T. Kearney/NCPDM productivity study

While rail has tried to regain its lost share of the market . . . , the trend appears to be toward more use of truck shipments. Once shipments go by truck, it is difficult for companies to shift back to rail.

While rail has tried to regain its lost share of the market through price initiatives, the trend appears to be toward more use of truck shipments. Once those shipments go by truck, it is difficult for companies to shift back to rail.

However, truck transport is generally higher in cost than rail, so paper companies are often paying a premium to ship products by truck. Based on my experience, more traffic could be handled by rail at lower costs if greater effort were given to better production planning, order scheduling, and working with customers to establish reasonable lead times and consistent/reliable delivery.

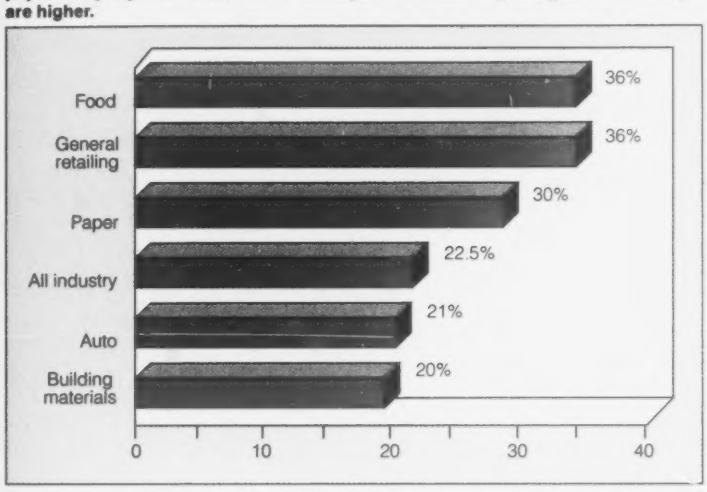
P&P: *Is the industry well positioned to achieve such freight savings opportunities?*

Anderson: Unfortunately, no, because of fragmentation within paper company organizations as to who influences and controls transportation. Based on a recent survey by Kearney of pulp and paper companies, transportation decision making in the paper industry appears to be highly fragmented (see related article, p. 56). It is common to find at least three organizational units in many paper companies that make transportation decisions. These groups include sales/marketing, mill shipping, and central transportation/distribution.

A fairly large portion of the paper industry's central transportation/distribution groups serve in an advisory capacity and will influence transportation decisions but not make them. They measure transportation costs and performance but are not directly responsible for modal decisions.

As mentioned earlier, modal decisions (whether to ship by rail or truck) are generally dictated by the customer or decided by sales and marketing, with emergency decision authority given to mill personnel (in the event production scheduling problems threaten promised delivery dates). Carrier selection decisions are generally made by the central transportation/distribution groups when there is line authority and by the mills when the central transportation/distribution group has

FIGURE 3: **Logistics costs as a percent of value added, which includes those controllable costs over and above raw materials, represent approximately 30% of a paper company's value-added chain. Only the food industry and general retailing are higher.**



staff authority.

Additionally, we found that many paper companies are decentralizing their transportation function, giving more control and decision-making responsibility to the mills and to their customers. Unfortunately, most mill transportation personnel are primarily concerned with getting the product shipped on time and damage free. They don't see the overall picture with respect to the company's total transportation system and how it should be controlled and leveraged.

For example, most mill-level decision makers don't know how to bundle and leverage traffic across several mills with the carriers. Or how a selection of core carriers benefits the entire company. They cannot answer questions such as, "What modal choices are best?" "Which customers should be allowed to pick up freight?" and "When does it make sense for the customer to arrange for the transportation if it has more leverage with the carriers?"

P&P: *What steps should be taken by paper companies to gain control over transportation and to leverage the cost improvements across the industry?*

Anderson: As discussed earlier, the fragmentation of control over transportation decision making is both internal and external. Thus, paper companies need to take steps within their organization to gain better control and management over the transportation function as well as to work with customers more effectively in understanding their requirements to make sure those requirements are being met in the most cost-efficient manner.

The following are some of the steps that I would recommend, starting with the customer. Paper companies should establish customer service requirements jointly with their customers. Such requirements should include on-time delivery, final mode of delivery, cycle time, and other service aspects, such as order completeness, damage, and invoice accuracy.

Once the requirement is understood and agreed on, then the party that is best positioned to work with the carriers as a partner should manage the process. This is usually the shipper. Then the shipper (or whoever is in the best position to work with the carrier) teams up with the appropriate carriers to work together on such areas as the following:

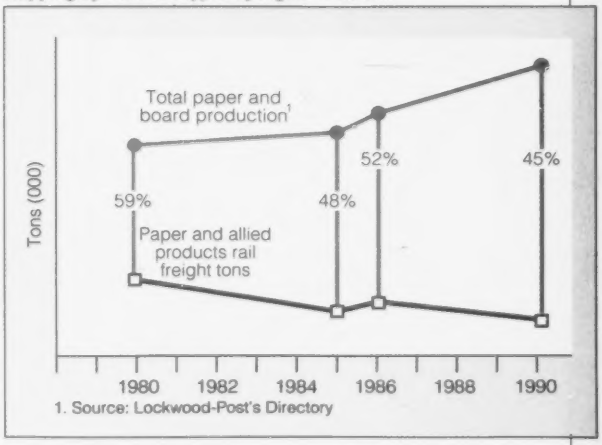
- Process improvements
- Productivity gains
- Rate for volume deals
- Service guarantees
- Value-added services, e.g., online or satellite tracking of shipments.

In addition, the company needs to establish pickup allowance policy. Paper companies should not let mills/marketing do it unilaterally. A paper company should take the following steps:

1. Identify and assign a senior management person (vice president level) to drive the process and to cut across division lines. Marketing and manufacturing should be involved in the process.

2. Centralize the transportation/logistics function at a corporate level under one department (if not centralized already) or develop a corporate transportation management council to oversee management of the function. If a transportation council is established, it should be

FIGURE 4: **While the rail industry has tried to regain some of its market share, especially in 1985 and 1986, it has increasingly lost pulp and paper business. Trucking companies now carry about 55% of total paper and board production, even though costs for shipping by truck are typically higher than rail.**



1. Source: Lockwood-Post's Directory

Enlightened senior management is beginning to awaken to the importance of transportation . . . They view logistics and transportation as critical to improve service and reduce costs.

chaired by a senior vice president.

The role of the central transportation department or council should be to plan the best process for managing transportation, select modes and carriers, negotiate rates and contracts with carriers, and monitor carrier performance and mill decision making.

3. Provide focus resources, including outside help if needed, to make a thorough evaluation of the company's transportation function, including the following:

- Analysis of where freight dollars are spent—by mode and carrier, by mill, and by product group
- Analysis of noncontrollable freight costs, i.e., customer pickup or where customer arranges and pays the freight
- Analysis of current rate levels vs those of competitors, and fair rate levels based on carrier's cost of service
- Assessment of competitive transportation options and identification of potential for capitalizing on corporate purchase volumes
- Assessment of modal choices and most cost-efficient method of transportation to meet customer service needs for each major traffic lane.

4. Conduct negotiations with carriers and establish contracts with core group of carriers. The scope of this responsibility includes the following:

- Developing negotiation strategies
- Establishing a negotiation team with senior management participation
- Developing a formalized bid program to go to carriers, both rail and truck, with traffic lane data and volumes provided; specific service requirements should be included also
- Leveraging competitive situations and total traffic volume across the company
- Establishing target rate levels based on carrier's costs and competitive situations.
- Awarding traffic and selecting carriers on basis of fact, including service performance, rates, equipment availability, damage, safety, service area coverage
- Working with customers in leveraging traffic and who should manage the relationship with the carriers.

5. Put in a system to monitor carrier performance, measure results, and receive ongoing feedback.

If a company follows the above steps, I feel confident that it will achieve greater cost efficiency without sacrificing customer service requirements.

P&P: *Why hasn't more focus been placed on this issue by senior management?*

Anderson: First, in most instances, they don't have full appreciation of the magnitude of the problem and that it is growing. Historically, senior management at paper companies have come up through the manufacturing and marketing side of the business. They have come to view transportation with less importance than manufacturing and marketing and consider it a given.

To many, transportation remains a shipping function. They are not concerned about who controls the freight and whether the function is centralized or decentralized. For the most part, they leave it up to the transportation managers in the company to manage the activity.

Most transportation managers, however, are more concerned about getting the product to the customer on time and damage free than they are with cost efficiency and who controls the freight. Also, most lack the responsibility and control to do much about it. Therefore, when a customer wants to pick up or control the freight, who is the transportation manager to say he can't. To him, it is primarily a marketing issue.

Moreover, the transportation manager probably lacks the resources to perform the kind of analysis needed to leverage the total transportation dollars across the company and make the optimum trade-offs of modal choices and who is in the best position to leverage freight, the shipper or the customer.

Enlightened senior management is beginning to awaken to the importance of transportation in the supply chain process. They view logistics and transportation as a critical component to improve service and reduce costs.

P&P: *Based on your experience in working with a number of different industries, how does the pulp and paper industry compare relative to the management and control of the transportation function?*

Anderson: Based on research conducted by Kearney during the last ten years, we have found that companies, and functions within companies, evolve through a series of Stages (I through IV). We have identified the various characteristics of "Stages of Excellence" found in transportation within each stage (Tables 2A and 2B).

It has been our experience that most pulp and paper companies exhibit Stage I characteristics in transportation, whereas industries in general are more likely to exhibit Stage II characteristics.

Ironically, paper companies exhibit a higher level of customer service than do most other industries. Our research indicates that paper companies are ahead in such areas as on-time delivery performance, order completeness, order fill rate, invoice accuracy, and damage-free receipt.

This further suggests that paper companies may be

paying too much to meet customer service requirements. Again, I believe improved service and cost efficiency can go hand in hand.

P&P: *What advise do you have for pulp and paper companies for assessing this problem within their company?*

Anderson: Senior management must begin by asking a number of fundamental questions of their organization:

- What do we really spend on outbound and inbound freight?
- What percentage of our shipments is noncontrollable, i.e., the customer picks up or arranges for the freight, and what are the dollar amounts being spent?
- Who decides the freight terms?
- How do we measure service reliability?
- Do we have a customer pickup policy? Who determines which customers can pick up and which ones cannot?
- What percentage of our business is handled as emergency shipments?
- Is senior management involved in negotiation of freight rates?
- Do we know how much we are paying in premium freight beyond what the rate carrier is?
- Do we know what our on-time service performance is, by carrier and by customer?
- Are we leveraging transportation across the entire company and with customers?

Answers to these questions will provide a barometer of how well the transportation function is being managed and whether costs are being sacrificed unnecessarily to achieve the service requested by the customer. ■

TABLES 2A and 2B: **A.T. Kearney has developed a method to analyze how a company evolves in its management of transportation. Called "stages of excellence," the method reveals that paper companies are only at Stage I, whereas other industries in general show Stage II characteristics.**

Level	Management focus	Characteristics	Reasons for action	Type of action
Stage I	Transaction processing	• Time period is today • Low productivity—people not doing the right things • No budgets • No information on transportation costs	• Daily operations • Crisis reaction	• Quick fix
Stage II	Cost control	• Time period is today and tomorrow • Reactive not proactive • Budgets covering most transportation expenditures • Basic operating information/no effective management information	• Budget pressure • Management directive	• Cost reduction
Stage III	Functional excellence	• Time period is year • Planning activities • Available management information • Monitor progress toward plans • Identify "best" transportation solution for short term	• Target improvement • Sales/demand shifts • Short-term plan	• Productivity improvement
Stage IV	Strategic integration	• Time period is long term (1 to 5 years) • Integrated management decisions (e.g., marketing, purchasing, transportation) • Sophisticated planning process in place • Very proactive	• Competitive positioning	• Long-term strategy

Level	Prerequisites for change	Transition requirements	Major improvements
Stage I	• Some reassignment of transportation responsibilities • Formal budgeting/planning process • Formal cost-reduction program	• Data availability • Management must understand — Size of expenditures — Opportunity for savings	Consolidate carrier base and conduct trade negotiation
Stage II	• Ongoing improvement program • Performance targets and measures • More proactive programs	• Comparative "benchmark" data • Management must be convinced — Transportation is important — Additional opportunity	Employ asset management programs for transportation
Stage III	• Integrated operations plan • Superior analytical capabilities • Broader responsibilities	• Clear linkage to business marketing, manufacturing strategies • Management must be committed	Design new distribution programs
Stage IV	• Dynamic business environment • Accept the challenge • Integrated business plans	• Ongoing management commitment to transportation	Employ customer profitability analysis to support decision making

Wastepaper, Woodchip, Pulp Exports Continue to Boom Despite Downturn

North American seaport survey shows a general leveling off in pulp, paper, and allied exports, but expectations are still high for wastepaper growth

By KELLY H. FERGUSON, Projects Editor

Massive tonnages of pulp, paper, and forest products continue to move through North American seaports, even though the current industry downturn has caused a slight leveling off in the growth the ports have experienced in the past two to three years, according to a *Pulp & Paper* survey of North American ports. But foreign demand for market pulp, wastepaper, and woodchips, coupled with normal trade between the U.S. and Canada, has meant that paper and allied exports from North America continue to be almost six to seven times the tonnage of imports.

The *Pulp & Paper* survey was sent to all North American ports listed in the American Assn. of Port Authorities' "Seaports of the Western Hemisphere" directory. The survey was completed by 37 ports from all leading shipping areas of the U.S. and Canada, including some of the largest pulp and paper ports. A similar survey was conducted in 1990 (*P&P*, November 1990, p. 65). While some comparison of results from the two surveys is possible, differences in methods used by ports to report data make a complete comparison impossible.

Tables 1 and 2 break down survey results by exports and imports of major products. Based on responses, the largest export was woodchips (6.34 million tons), followed by wastepaper (4.20 million tons) and market pulp (4.09 million tons). As in last year's survey, the Northwest ports—Coos Bay and Portland, Ore., and Tacoma, Wash.—exported the most woodchips, logs, and lumber. However, the Alabama State Docks (Port of Mobile) made a significant leap in woodchip exports, going from 250,000 tons in the 1990 survey to 837,050 tons in this year's survey.

On the import side, newsprint was the leader (1.11 million tons), followed by logs and lumber (included in the "Other" category) and paper/paperboard. The largest newsprint tonnages came into the ports of Long Beach, Calif., Tacoma, Wash., Canaveral, Fla., and Houston, Texas, and the majority of total newsprint tonnage was likely brought down from Canada or shipped from other U.S. ports. Most of the imported market pulp came into the northern ports (probably shipped from Canada), but major shipments were also received by the ports of Mobile, Ala., and Savannah, Ga.

WASTEPAPER GROWS, PAPER PRODUCTS PLATEAU. Almost all responding ports that handle wastepaper indicated an increase in tonnage over the previous year, and most expect those increases to continue (see sidebar). The largest exporters of wastepaper, according to the 1991 survey, were the ports of New York-New Jersey (1.42 million tons) and Long Beach (923,218 tons), Worldport L.A., (683,540 tons), and Oakland (610,344 tons) in California.

Interestingly, the Port of Miami, Fla., indicated no wastepaper handling in 1990, but showed a tonnage of 85,000 in the 1991 survey. This increase is probably indicative of the rapid increase in companies wanting to take advantage of the booming wastepaper export market. That market, though, has slowed dramatically. According to a report in the June 1991 issue of *Paper Recycler*, lower market pulp prices and a decreased consumer demand for paper and paperboard products in foreign nations have slowed the need for the high-quality U.S. wastepaper that was in such demand during the past several years. However, foreign demand is expected to pick up by the end of 1991.

Market pulp export tonnages, as expected, seem to echo the general industry downturn. Most of the major market pulp ports that responded to both surveys said that tonnages had dropped. The Port of Mobile showed a decrease from 900,000 tons in 1990 to 743,948 tons in 1991. The Georgia Ports Authority (Savannah and Brunswick) reported a decrease from 539,668 tons in 1990 to 481,677 tons in 1991. Other major market pulp ports showing decreases were Baton Rouge, La., New Orleans, La., Charleston, Va., and Tacoma, Wash. Some ports showed increases, however, including the ports of Pascagoula, Miss., (156,431 tons in 1990 to 227,936 tons in 1991) and North Carolina (440,000 tons in 1990 to 552,509 tons in 1991). Several ports reported that their handling of market pulp had increased significantly:

- *Port of Pascagoula:* 31% increase in five years, up 70,804 tons since 1986

• *North Carolina Ports Authority (Morehead City and Wilmington):* 303,862 tons in 1986 to 552,509 in 1991

• *Port of Houston:* No tonnage in 1985 to 15,190 tons in 1989

• *Port of Portland:* 67,237 tons in 1986 to 79,121 tons in 1990

• *Squamish Terminals, B.C.:* 40% tonnage increase from 1985 to 1990.

PURSUING PAPER BUSINESS. Almost all the responding ports said they had special facilities for handling and storing of pulp, paper, and forest products. Several also said they were planning to construct new facilities or modernize existing facilities to increase tonnage capacity of forest products shipments. Wastepaper storage areas were one of the expansion projects mentioned most.

The ports were also asked if they were actively pursuing, or planned to pursue, business from pulp, paper, and allied companies. Almost all respondents said they were marketing to the forest products industry, and some of the specific port activities are listed as follows:

• *Port of Baltimore.* "The Port of Baltimore is emerging as a leading woodpulp and forest products center. The Maryland Port Administration and private companies in the port are actively pursuing pulp and paper business. The port has a solid foundation of pulp and forest products business. Port officials are working to solicit new business and to increase the tonnages from existing customers."

• *Port of Albany (N.Y.).* "Continued marketing and contact with brokers and users of market pulp, showing Albany's unique geographic location."

• *Port of New York-New Jersey.* "We have recently upgraded our facilities, and, through joint sales calls and advertising, are seeking additional pulp and paper cus-

TABLE 1: **Export tonnages of pulp and paper products from North American seaports.**

Exports							
Port	**Newsprint**	**Paper/ paperboard**	**Kraft paper**	**Market pulp**	**Wastepaper**	**Woodchips**	**Other**
North/Midwest							
Baltimore, Md.	—	21,124	9,585	4,007	50,353	—	307,232
Delaware River, N.J.	—	119,162	—	67,997	29,141	—	—
Albany, N.Y.	—	—	—	—	—	—	—
New York-New Jersey	11,594	105,213	30,041	20,146	1,429,612	—	—
South							
Mobile, Ala.	10,827	12,998	289,459	743,948	—	837,050	—
Canaveral, Fla.	—	—	—	—	—	—	—
Miami, Fla.	—	22,000	—	—	85,000	—	—
Port Everglades, Fla.	3,000	3,000	—	—	40,000	—	—
Tampa, Fla.	—	—	22,918	—	11,361	—	—
Brunswick, Ga.	—	11,515[1]	—	428,418	—	—	—
Savannah, Ga.	—	303,003[1]	—	55,259	—	—	—
Baton Rouge, La.	—	58,375	—	260,444	—	—	—
Lake Charles, La.	11,471	83,325	—	—	—	169,824	—
New Orleans, La.	10,175	285,710[2]	—	136,831	—	6,807	—
Gulfport, Miss.	—	106,040	—	—	—	—	—
Pascagoula, Miss.	—	28,392	—	227,936	—	—	—
North Carolina	—	4,576	12,929	552,509	—	436,425	15,579
Charleston, S.C.	—	721,728[3]	—	359,872	—	—	209,852[4]
Beaumont, Texas	—	5,148	—	3,542	—	42,988	—
Corpus Christi, Texas	4,032	—	—	—	—	—	—
Galveston, Texas	—	7,456	4,201	—	245	85	—
Houston, Texas	5,850	8,287	98,772	11,077	24,809	—	47,828
Port Arthur, Texas	—	2,245	18,855	13,251	—	—	—
Richmond, Va.	—	—	—	—	4,192	—	—
West							
Long Beach, Calif.	52,053	—	—	25,210	923,218	—	—
Oakland, Calif.	16,739	14,786	9,207	18,019	610,344	1,030	—
Worldport L.A., Calif.	49,838	—	—	—	683,540	—	27,212
Honolulu, Hawaii	—	—	—	—	50,728	—	—
Coos Bay, Ore.	—	18,727[5]	—	—	—	2,988,391	—
Portland, Ore.	—	216,645[6]	—	79,121	77,699	683,311	579
Grays Harbor, Wash.	21,000	—	—	7,200	1,500	—	—
Port Longview, Wash.	—	—	—	17,802	—	—	—
Tacoma, Wash.	114,776	67,433	136,531	122,867	184,318	1,179,275	2,910,741[4]
Canada							
Port Alberni, B.C.	378,036	—	—	85,737	—	—	—
Squamish, B.C.	19,841	—	2,204	760,587	—	—	—
Chicoutimi; Que.	—	—	—	89,000	—	—	—
Quebec, Que.	156,094	8,582	—	1,222	—	—	—

1. Includes newsprint, kraft paper, and wastepaper.
2. Includes kraft paper and wastepaper.
3. Includes all paper and board grades and wastepaper.
4. Tonnages are for logs and lumber.

tomers based on a commitment to superior customer service and competitive prices."

• *Port Everglades Authority.* "The marketing and sales department contacts paper import and export customers and the companies that handle these commodities at Port Everglades."

• *Tampa Port Authority.* "Aggressively marketing our facilities and services to suppliers in our area, as well as to buyers in Latin America."

• *Georgia Ports Authority.* "The pulp and paper business has been of particular importance to the Georgia Ports Authority for many years. Specific attention will be given in the future to emphasize its use to draw ocean carrier service."

• *Port of Lake Charles.* "Direct sales calls, direct mail campaigns, and special wharfage rates."

• *Port of Pascagoula.* "Direct contacts with more companies. Securing additional ocean carriers and expanded trade routes. Continuing to increase our enclosed cargo facilities."

• *North Carolina Ports Authority.* "An ongoing program is in place to maintain current volume and add to tonnages in response to ever-increasing market pressure; also to ensure shippers/carriers of sufficient storage space availability and constantly updating handling-equipment capability. Also, we maintain a constant dialogue with inland modes to improve rate structure in relation to competing ports from mill to port."

• *Port of Beaumont.* "By stressing the following points: ideal port location with about 50 forest products mills within a 100-mile radius; excellent and economical highway and rail connections to forest products mills; efficient layout for handling diverse types of forest product cargoes; and expedited switching from rail cars to wharves, with around-the-clock direct services by four major rail carriers." ■

TABLE 2: **Import tonnages of pulp and paper products from North American seaports.**

Imports							
Port	**Newsprint**	**Paper/ paperboard**	**Kraft paper**	**Market pulp**	**Wastepaper**	**Woodchips**	**Other**
North/Midwest							
Baltimore, Md.	—	21,124	9,585	4,007	50,353	—	307,232
Delaware River, N.J.	—	513,549	—	138,190	59,224	—	—
Albany, N.Y.	—	—	—	25,000	—	—	—
New York-New Jersey	72,768	153,024	4,768	80,438	—	—	—
South							
Mobile, Ala.	—	—	—	104,326	—	—	—
Canaveral, Fla.	145,000	—	—	—	—	—	—
Miami, Fla.	55,000	5,000	—	—	—	—	—
Port Everglades, Fla.	72,700	4,000	—	—	5,000	—	—
Tampa, Fla.	9,969	—	—	—	—	—	—
Brunswick, Ga.	—	—	—	—	—	—	—
Savannah, Ga.	—	15,345[1]	—	103,040	—	—	—
Baton Rouge, La.	—	—	—	—	—	—	—
Lake Charles, La.	—	—	—	—	—	—	—
New Orleans, La.	301	8,674[2]	—	—	—	9,996	—
Gulfport, Miss.	—	—	—	8,421	—	—	—
Pascagoula, Miss.	3,598	—	—	—	—	—	—
North Carolina	—	1,021	—	1,572	—	—	424
Charleston, S.C.	—	131,010[3]	—	1,154	—	—	88,171[4]
Beaumont, Texas	—	—	—	—	—	—	—
Corpus Christi, Texas	—	—	—	—	—	—	—
Galveston, Texas	332	6,092	—	—	106	—	—
Houston, Texas	120,676	86,000	160	—	—	—	36,700
Port Arthur, Texas	3,479	—	—	—	—	—	—
Richmond, Va.	15,552	—	—	—	—	—	—
West							
Long Beach, Calif.	373,686	—	—	—	—	—	—
Oakland, Calif.	7,203	44,000	219	83	—	—	—
Worldport L.A., Calif.	21,115	—	—	—	237	—	38,408[4]
Honolulu, Hawaii	40,742	31,872	—	—	—	—	—
Coos Bay, Ore.	—	—	—	—	—	—	—
Portland, Ore.	—	613	—	—	—	—	—
Grays Harbor, Wash.	—	—	—	—	—	—	—
Port Longview, Wash.	—	—	—	—	—	—	—
Tacoma, Wash.	173,134	9,311	3,086	—	8,778	8,736	—
Canada							
Port Alberni, B.C.	—	—	—	—	—	—	—
Squamish, B.C.	—	—	—	—	—	—	—
Chicoutimi, Que.	—	—	—	—	—	—	—
Quebec, Que.	2,173	267	—	—	—	—	562,681[4]

1. Includes newsprint, kraft paper, and wastepaper.
2. Includes kraft paper and wastepaper.
3. Includes all paper and board grades and wastepaper.
4. Tonnages are for logs and lumber.

The growing wastepaper export market

The boom in recycled fiber use, in North America and throughout the world, has had an enormous impact on the amount of wastepaper being shipped through seaports. The recovery rate for all grades of wastepaper has just begun to pick up in the U.S. and Canada; thus large amounts of high-quality recyclable fiber have gone untouched by North American paper companies until recently. Nations in the Pacific Rim, Europe, and Latin America have taken advantage of this situation, importing increased amounts of fiber and creating a booming business in wastepaper exporting.

But with more North American pulp and paper companies utilizing recycled fiber in their own processes, the total amount of wastepaper available for export will shrink. Almost all the surveyed ports that handle wastepaper indicated that their wastepaper exports had increased during the last five years. The survey also asked if the ports were expecting wastepaper shipments to grow in the next five years. Some of the predictions follow:

Port	Growth predictions
Delaware River	Discussions with paper-handling firms indicate exports of wastepaper will rise significantly in the next five years. Estimated growth rate could be 25% to 35%.
Long Beach	Expected growth will be 5% to 10% in the next five years.
Port Everglades	Wastepaper exports should grow about 5% to 10% per year.
Tampa	Exports should grow approximately 10% to 15% in the next five years.
New York-New Jersey	Due to the new laws requiring a greater percentage of recycled fibers to be included in newsprint within the states of New York and New Jersey, we expect that rail shipments of wastepaper to Canadian newsprint mills will increase, absorbing the growing volume of wastepaper. The unavailability of ocean containers for shipping wastepaper, a low value commodity, also limits volume of exports.
North Carolina	We definitely expect exports of wastepaper to grow during the next five years, especially in the break-bulk sector. Currently, there are no significant tonnages exported from Wilmington or Morehead City. What is moving currently is in containers when available, and they are very scarce at the moment. Percentage increase could be in triple figures.
Worldport L.A.	Export growth will depend on the growth of Chinese (mainland) trade.

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